



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 400  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/689,900

10/21/2003

Weidong Cai

200311514-1

3969

7590

09/14/2006

HEWLETT-PACKARD COMPANY

Intellectual Property Administration

P.O. Box 272400

Fort Collins, CO 80527-2400

EXAMINER

INGBERG, TODD D

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/689,900

Applicant(s)

CAI, WEIDONG

Examiner

Todd Ingberg

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/21/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/21/2003</u> | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1 – 15 have been examined.

#### ***Information Disclosure Statement***

1. The Information Disclosure Statement (IDS) filed 01/21/2003 has been considered.

#### ***Drawings***

2. The drawings filed 10/21/2003 are accepted.

#### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13 – 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The current focus of the Patent Office in regard to statutory inventions under 35 U.S.C. § 101 for method claims and claims that recite a judicial exception (software) is that the claimed invention recite a practical application. Practical application can be provided by a physical transformation or a useful, concrete and tangible result. No physical transformation is recited and additionally, the final result of the claim is thread control which is not a tangible result because is not written to a computer readable medium. The following link on the World Wide Web is for the United States Patent And Trademark Office (USPTO) policy on 35 U.S.C. §101.

[http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101\\_20051026.pdf](http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf)

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Windows 2000 Kernel Debugging, 2001, by Steven McDowell.

**Claim 1**

McDowell anticipates a method of obtaining status information from user threads of a target process( McDowell, pages 83 – 85 and 97 - 98, successful Interrupt without halt as per page 71), the method-comprising: performing a system call from a querying process (McDowell, page 97, APIC); creating a kernel debug thread in a kernel entity of the target process (McDowell, page 97, I/O APIC Entry Field); and creating a user status thread in a user entity of the target process (McDowell, pages 96 - 97, as per above and including Processor entry field).

**Claim 2**

The method of claim 1, wherein the method does not require stopping of the target process (McDowell, page 71, Interrupt does not halt).

**Claim 3**

The method of claim 1, further comprising: the user status thread collecting status information from other user threads of the target process (McDowell, pages 83-84).

**Claim 4**

The method of claim 3, further comprising: passing the collected status information from the user status thread to the kernel debug thread (McDowell, pages 96-100 – see page 98 top of page).

**Claim 5**

The method of claim 4, wherein the user status thread goes into a sleep state after passing the collected status information to the kernel debug thread. (As per claim 2 – does not halt).

**Claim 6**

The method of claim 4, further comprising: relaying the collected status information from the kernel debug thread to the querying process. As per claim 4.

**Claim 7**

Art Unit: 2193

The method of claim 6, wherein the kernel debug thread goes into a sleep state after relaying the collected status information to the querying process. (As per claim 2 – does not halt).

**Claim 8**

The method of claim 1, wherein the method is performed in conjunction with an operating system having an MxN thread model. (McDowell, page 99, APIC – Multiple source to multiple CPUs – consistent with IDS Thread Model Operating System).

**Claim 9**

The method of claim 1, wherein the kernel debug thread is created by the system call. As per claim 1.

**Claim 10**

The method of claim 1, wherein the user status thread is first created in the kernel entity as a scheduler activation and then comes up to the user entity via an upcall handler (McDowell, page 98, Address space showing the address range (a scheduler)).

**Claim 11**

The method of claim 1. wherein the status information does not relate to registers of the user threads, and wherein none of the user threads need to be halted. As per claims 1 and 2.

**Claim 12**

The method of claim 1, wherein the status information relates to at least one register of a user thread, and wherein the user thread is temporarily suspended. As per claim 10 part of the described connection.

**Claim 13**

McDowell anticipates an operating system with capability to obtain status information from user threads of a target process (McDowell, pages 76-85), the operating system (McDowell, Windows): a first system call configured to create a kernel debug thread in a kernel entity of the target process (McDowell, page 96, Process entry field); and a second system call configured to awake the kernel debug thread (McDowell, page 97, Interrupt Entry Fields – a second interrupt called - Interpreted to be part of the system call –not active until called) and pass information to the kernel debug thread (McDowell, pages 70-72 and page 74).

Examiner Note

This claim not requiring no halting.

**Claim 14**

The operating system of claim 13, further comprising: a thread library configured to register a user status thread's stack and data memory (McDowell, pages 78 – 85 – shows stack and memory – These structures are inherent in Kernel debuggers and not an option).

**Claim 15**

Art Unit: 2193

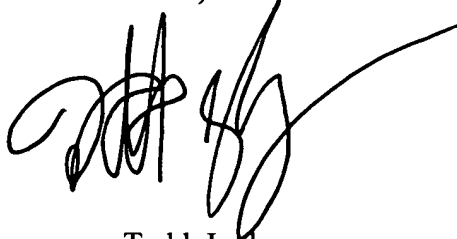
The operating system of claim 14, further comprising: a body function in a thread library which is configured to sleep until awakened to act upon a user thread status inquiry (Interpreted to be part of the system call –not active until called).

### ***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Todd Ingberg whose telephone number is (571) 272-3723. The examiner can normally be reached on during the work week..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to be 'TI' followed by a stylized flourish.

Todd Ingberg  
Primary Examiner  
Art Unit 2193